

REMARKS

Claims 1, 2, 5, 9-11 and 13-15 have been examined, and have been rejected under 35 U.S.C. § 103(a).

I. Rejections under 35 U.S.C. § 103(a) in view of U.S. Patent No. 5,523,728 to McCorkle (“McCorkle”) and U.S. Patent No. 6,225,568 to Lin et al. (“Lin”).

The Examiner has rejected claims 2 and 11 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McCorkle in view of Lin.

A. Claim 2

Applicant submits that claim 2 is patentable over the cited references. For example, claim 2 recites that at least one through hole is formed in a ground plate, and an aperture size of the through hole is smaller than a width of the signal line.

The Examiner acknowledges that McCorkle fails to disclose the above feature, but contends that Lin does. As shown, for example, in Fig. 2 of Lin, the ground planes 28 and 40 are provided with voids 82. Figure 2 also shows transmission lines 60, 62, 64, 66, 68 and 70. Assuming *arguendo* that the transmission lines teach a type of signal line, the aperture size of the voids 82 are much larger than the width of the respective transmission lines, and are thus, contrary to the recitations of claim 2. Further, Applicant submits that none of the remaining figures of Lin show an aperture size that is smaller than a width of the transmission lines. Accordingly, even if there was proper motivation for combining the references, the alleged combination of the references would still fail to teach or suggest every feature recited in claim 2.

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In view of the above, Applicant submits that claim 2 is patentable over the cited references, and respectfully requests the Examiner to reconsider and withdraw the rejection.

B. Claim 11

Since claim 11 contains features that are analogous to the features recited in claim 2, Applicant submits that claim 11 is patentable for at least analogous reasons as claim 2.

II. Rejections under 35 U.S.C. § 103(a) in view of U.S. Patent No. 5,633,613 to MacDonald (“MacDonald”) and Lin.

The Examiner has rejected claims 2 and 11 under 35 U.S.C. § 103(a) as allegedly being unpatentable over MacDonald in view of Lin.

A. Claim 2

Applicant submits that claim 2 is patentable over the cited references. For example, claim 2 recites that at least one through hole is formed in a ground plate, and an aperture size of the through hole is smaller than a width of the signal line.

The Examiner acknowledges that MacDonald fails to disclose the above feature, but contends that Lin does. As shown, for example, in Fig. 2 of Lin, the ground planes 28 and 40 are provided with voids 82. Figure 2 also shows transmission lines 60, 62, 64, 66, 68 and 70. Assuming *arguendo* that the transmission lines teach a type of signal line, the aperture size of the

voids 82 are much larger than the width of the respective transmission lines, and are thus, contrary to the recitations of claim 2. Further, Applicant submits that none of the remaining figures of Lin show an aperture size that is smaller than a width of the transmission lines. Accordingly, even if there was proper motivation for combining the references, the alleged combination of the references would still fail to teach or suggest every feature recited in claim 2.

In view of the above, Applicant submits that claim 2 is patentable over the cited references, and respectfully requests the Examiner to reconsider and withdraw the rejection.

B. Claim 11

Since claim 11 contains features that are analogous to the features recited in claim 2, Applicant submits that claim 11 is patentable for at least analogous reasons as claim 2.

III. Rejections under 35 U.S.C. § 103(a) in view of McCorkle and U.S. Patent No. 4,851,793 to Heckaman et al. (“Heckaman”)

The Examiner has rejected claims 1, 9, 10, 14 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McCorkle and Heckaman.

A. Claim 1

Applicant submits that claim 1 is patentable over the cited references. For example, claim 1 recites that at least one through hole is formed in a signal line.

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The Examiner acknowledges that McCorkle fails to teach the above feature, but contends that Heckaman does. In particular, the Examiner maintains that mesas 14 of Heckaman disclose the claimed through hole, while plate 11 discloses the claimed signal line. However, plate 11 is merely for holding insulated jacketed wires (col. 3, lines 40-43). Nevertheless, even if Applicant assumes *arguendo* that the plate 11 discloses a type of signal line, the reference still fails to teach or suggest the claimed features. For example, mesas 14 are not “through holes.” Rather, the mesas 14 are protrusions of plate material formed by the grooves 12 and channels 13 (col. 3, lines 45-51). Further, Applicant submits that the grooves 12 and channels 13 do not form a type of through hole since they do not extend all the way through the plate 11. Rather, as taught in Heckaman, the grooves 12 and channels 13 have a contiguous bottom surface 16 (col. 3, lines 51-57).

In addition, in Fig. 5 of Heckaman, pockets 60 are formed in the plate 11 by removing portions of the wafflegrid pattern. However, the reference teaches that such portions are removed in order to insert circuit components such as microchip carriers (col. 5, lines 35-48). Thus, contrary to the recitations of claim 1, the inner wall of the pockets 60 would not “only” be electrically connected to the signal line. Rather, they would also be electrically connected to the chip carriers 61. Accordingly, Heckaman fails to teach or suggest the claimed through holes.

In view of the above, Applicant submits that even if combined, the references fail to teach or suggest every feature recited in claim 1.

B. Claim 9

Claim 9 recites that the signal line is formed of a plurality of thin strips that are connected at respective terminal ends of the thin strips.

The Examiner acknowledges that McCorkle fails to teach the above feature, but contends that Heckaman does. On page 7 of the Office Action, it appears that the Examiner maintains that the grooves 12 of Heckaman, as shown in Fig. 1, disclose the claimed plurality of strips. However, the grooves 12 are voids in the plate 11, they are not “strips” of signal lines. Further, as set forth in Heckaman, each of the channels 12 and 13 share a contiguous bottom surface 16, such that the plate 11 is one element, and not formed of a plurality of strips that are connected at respective terminal ends of the thin strips, as recited in claim 9.

Accordingly, Applicant submits that Heckaman fails to cure the deficient teachings of McCorkle, and respectfully requests the Examiner to reconsider and withdraw the rejection of claim 9.

C. Claim 10

Since claim 10 contains features that are analogous to the features recited in claim 1, Applicant submits that claim 10 is patentable for at least analogous reasons as presented above.

D. Claims 14 and 15

Applicant submits that claims 14 and 15 are patentable at least by virtue of their dependency on one of claims 9 or 10.

IV. Rejections under 35 U.S.C. § 103(a) in view of MacDonald and Heckaman.

The Examiner has rejected claims 1, 9, 10, 14 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over MacDonald in view of Heckaman.

Applicant submits that claim 1 is patentable over the cited references. For example, claim 1 recites that at least one through hole is formed in a signal line.

The Examiner acknowledges that MacDonald fails to teach the above feature, but contends that Heckaman does. As set forth above, the Examiner maintains that mesas 14 of Heckaman disclose the claimed through hole, while plate 11 discloses the claimed signal line. However, plate 11 is merely for holding insulated jacketed wires (col. 3, lines 40-43). Nevertheless, even if Applicant assumes *arguendo* that the plate 11 discloses a type of signal line, the reference still fails to teach or suggest the claimed features. For example, mesas 14 are not “through holes.” Rather, the mesas 14 are protrusions of plate material formed by the grooves 12 and channels 13 (col. 3, lines 45-51). Further, Applicant submits that the grooves 12 and channels 13 do not form a type of through hole since they do not extend all the way through the plate 11. Rather, as taught in Heckaman, the grooves 12 and channels 13 have a contiguous bottom surface 16 (col. 3, lines 51-57).

In addition, in Fig. 5 of Heckaman, pockets 60 are formed in the plate 11 by removing portions of the wafflegrid pattern. However, the reference teaches that such portions are removed in order to insert circuit components such as microchip carriers (col. 5, lines 35-48). Thus, contrary to the recitations of claim 1, the inner wall of the pockets 60 would not “only” be electrically connected to the signal line. Rather, they would also be electrically connected to the chip carriers 61. Accordingly, Heckaman fails to teach or suggest the claimed through holes.

In view of the above, Applicant submits that even if combined, the references fail to teach or suggest every feature recited in claim 1.

B. Claim 9

Claim 9 recites that the signal line is formed of a plurality of thin strips that are connected at respective terminal ends of the thin strips.

The Examiner acknowledges that MacDonald fails to teach the above feature, but contends that Heckaman does. On page 7 of the Office Action, it appears that the Examiner maintains that the grooves 12 of Heckaman, as shown in Fig. 1, disclose the claimed plurality of strips. However, the grooves 12 are voids in the plate 11, they are not “strips” of signal lines. Further, as set forth in Heckaman, each of the channels 12 and 13 share a contiguous bottom surface 16, such that the plate 11 is one element, and not formed of a plurality of strips that are connected at respective terminal ends of the thin strips, as recited in claim 9.

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Accordingly, Applicant submits that Heckaman fails to cure the deficient teachings of MacDonald, and respectfully requests the Examiner to reconsider and withdraw the rejection of claim 9.

C. Claim 10

Since claim 10 contains features that are analogous to the features recited in claim 1, Applicant submits that claim 10 is patentable for at least analogous reasons as presented above.

D. Claims 14 and 15

Applicant submits that claims 14 and 15 are patentable at least by virtue of their dependency on one of claims 9 or 10.

V. Rejection under 35 U.S.C. § 103(a) in view of McCorkle, Heckaman and Lin

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McCorkle, Heckaman and Lin.

Claim 5 recites that at least one through hole is formed in a signal line, and an inner wall of the through hole is only directly electrically connected to the signal line. Further claim 5 recites that at least one through hole is formed in a ground plate, and an inner wall of the through hole is only directly electrically connected to the ground plate.

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For at least analogous reasons as presented above for claims 1 and 2, Applicant submits that the Heckaman and Lin references fail to cure the deficient teachings of McCorkle. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection.

VI. Rejection under 35 U.S.C. § 103(a) in view of MacDonald, Heckaman and Lin

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as allegedly being unpatentable over MacDonald, Heckaman and Lin.

Claim 5 recites that at least one through hole is formed in a signal line, and an inner wall of the through hole is only directly electrically connected to the signal line. Further claim 5 recites that at least one through hole is formed in a ground plate, and an inner wall of the through hole is only directly electrically connected to the ground plate.

For at least analogous reasons as presented above for claims 1 and 2, Applicant submits that the Heckaman and Lin references fail to cure the deficient teachings of MacDonald. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection.

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VII. Rejection under 35 U.S.C. § 103(a) in view of McCorkle, Heckaman, Lin and U.S. Patent No. 5,479,138 to Kuroda et al. (“Kuroda”).

The Examiner has rejected claim 13 under 35 U.S.C. § 103(a) in view of McCorkle, Heckaman, Lin and Kuroda. However, since claim 13 is dependent upon claim 5, and Kuroda fails to cure the deficient teachings of McCorkle, Heckaman and Lin, in regard to claim 5, Applicant submits that claim 13 is patentable at least by virtue of its dependency.

VIII. Rejection under 35 U.S.C. § 103(a) in view of MacDonald, Heckaman, Lin and McCorkle

The Examiner has rejected claim 13 under 35 U.S.C. § 103(a) in view of MacDonald, Heckaman, Lin and Kuroda. However, since claim 13 is dependent upon claim 5, and Kuroda fails to cure the deficient teachings of MacDonald, Heckaman and Lin, in regard to claim 5, Applicant submits that claim 13 is patentable at least by virtue of its dependency.

IX. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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